

REMARKS

This Preliminary Amendment accompanies a continuation application of U.S. Ser. No. 10/379,020. In the present application, claims 1-19 of the original application have been canceled, and claims 20-46 has been added. Claims 20-46 are presented for consideration by the Examiner. The present Remarks refer to the Notice of Allowability in the parent case, including the Reasons for Allowance and Notice of References Cited mailed December 31, 2003 in the parent case, in which the Examiner allowed all the claims.

Applicants would like to thank the Examiner for his allowance of the originally-presented claims in the parent case. To expedite issuance, applicants have paid the issue fee in that case and have filed this continuation to pursue further claims.

Discussion

Independent Claims 20 and 34

Claims 20 and 34 are directed to an aspect of the present invention whereby an apparatus and method are used to detect an insulation fault in a cable that is partially submerged in liquid. Those circumstances are frequently encountered in the repair of cables in an outdoor plant such as a fiber optic cable plant, where buried cables are terminated in splice boxes. Ground water frequently enters such enclosures, as well as earth surrounding a cable run (see present specification, para. [0006] – [0008]). Using the method and apparatus of the present invention, a fault in the cable sheath can be located under those adverse conditions.

New claims 20 and 34 require a voltage probe positioned adjacent to the cable so that current is conducted by the liquid from a conductor in the cable to the probe. Applicants submit that none of the art of record (as cited by the Examiner in Form PTO 892 and cited by the Applicants in form PTO 1449) teaches or suggests such an arrangement. Boenning et al. discloses detecting chafing on a fixed object. Lowery et al. and Peschel teach contact electrodes for probing insulation defects. Gambrill discloses a high-voltage electrode that apparently surrounds the wire with an air gap.

Rowland et al., in the prior art section of that disclosure, teaches submerging a wire in a water tank and detecting an insulation fault. No probe is positioned near the wire. Rowland et al. notes that the location of the fault on the wire is not detected using that technique.

Independent Claims 26 and 42

Claims 26 and 42 are limited to a method and apparatus wherein the voltage applied to the conductor contained in the cable is a relatively low voltage of between approximately 80 and 100 volts. That voltage corresponds to the cable locating voltage normally used in detecting an underground location of a fiber optic cable using the technique described in the present specification at paragraphs [0003] – [0004]. Were a high voltage to be used on the cable locating current conductor of a fiber optic cable, it would be likely to damage the cable.

In contrast, much of the art cited in the present case depends on a high-voltage field to create an electric arc at a point of an insulation fault. Gambrill teaches applying between 6,000 and 8,000 volts (col. 2, lines 36-40). Rowland et al. teach a “high voltage” (col. 4, lines 14-20). Peschel requires a high voltage source of up to 10,000 volts (col. 2, lines 34-38). Lowery et al. discloses applying about 25,000 volts, with a maximum of 40 kV (col. 4, lines 56-59).

While Boenning et al. do not disclose a specific voltage applied, that reference does not teach a technique for locating a fault. Instead, the location is known as the location of the fixed structure causing the chafing. No probe is displaced along the cable.


Conclusion

Applicants therefore respectfully assert that claims 20-46 are in condition for allowance for at least the reasons discussed above, and earnestly request that the Examiner issue a Notice of Allowance.

Should the Examiner have any questions regarding the present case, the Examiner should not hesitate in contacting the undersigned at the number provided below.

Respectfully submitted,

By


Robert T. Canavan

Reg. No. 37,592

Telephone: 908-707-1568

Canavan & Monka LLC
805 Partridge Drive
Bridgewater, NJ 08807

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